

I. **MUTIPLE CHOICE.** Choose which among the choices is best described by the corresponding statements. (1 points each)

1. Software engineering
 - a. has had no effect on WebApp development
 - b. has had no influence on the WebE process
 - ☒ c. is the underlying philosophy from which WebE has emerged
 - d. none of the above
2. An umbrella activity
 - a. shields the project when problems arise
 - b. is deployed only on a "rainy day"
 - ☒ c. occurs throughout a WebE project
 - d. none of the above
3. The perspective on quality which depends on the amount the customer is willing to pay for a system is:
 - a. user view
 - b. manufacturing view
 - ☒ c. value-based view
 - d. transcendental view
4. All of the following are main benefits of prototyping EXCEPT:
 - a. help users identify key requirements of a system
 - ☒ b. help customers identify key business objectives
 - c. demonstrate feasibility
 - d. a & b
5. Significant members of the development team who maintain correspondence among various artifacts are the
 - a. requirement analysts team
 - b. designers and programmers team
 - c. maintenance team
 - ☒ d. configuration management team

- d. none of the above
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6. You're about to embark on a WebApp development project. How should you begin:
- a. sketch out the design of the home page and build a prototype that you think will meet user's needs
 - b. collect all of the content that you think will be needed
 - ☒ c. talk with potential users in an effort to understand what they want how they interact with the WebApp
 - d. none of the above

7. _____ refers to a combination of tools and techniques to produce product
- a. Method
 - ☒ b. Procedure
 - c. Tool
 - d. Instrument
8. The "old school" approach for the development of WebApps refers to
- a. the use of HTML as the only development language
 - ☒ b. the use of informality, urgency, intuition, and art as the driving forces in WebApp development
 - c. the creation of content-driven websites
 - d. all of the above
9. Which of the following statements differentiates WebApps from conventional software
- a. performance can be a critical aspect of the application
 - b. load is unpredictable
 - c. immediacy is often a primary goal
 - ☒ d. all of the above
10. Software engineering is a discipline that is
- a. focusing on only computer technologies
 - ☒ b. focusing on computer and software technologies as a problem-solving tool
 - c. focusing on computer hardware, compilers, operating systems, and programming languages
 - d. b & c
11. Which of the following statements describe the ROI approach
- a. reducing costs
 - b. predicting savings
 - c. improving productivity
 - ☒ d. all of the above
12. Any WebApp can begin as a simple informational site and evolve into another category over time
- ☒ a. True
 - b. False
13. A framework is a set of activities that will *always* be performed for every WebApp

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 - b. False
13. A framework is a set of activities that will *always* be performed for every Web engineering project.
- ☒ a. True
 - b. False
14. Rely on early users to debug the WebApp ONLY before releasing the system.
- a. True
 - ☒ b. False

15. The synthesis process is to decompose a large problem into smaller, understandable pieces.

- a. True
- ☒ b. False

II. SHORT ANSWERS:

(18 points)

1. Why do developing web applications need to be agile?

(8 points)

- 1) Business Strategies and rules are change rapidly
- 2) Stake holders don't understand the consequence of the web and keep changing their minds.
- 3) helps to cope with fluidity and uncertainty
- 4) ~~Man~~ Management demands are near-instantaneous responses

2. What are the conditions for tools and technology to work well within a WebApp development?

(2 points)

- 1) To be used without agile framework process
- 2) in conjunction with proven methods for understanding problems, design solution and Testing.

3. Briefly describe the actions that are set in compose any framework in Web Engineering?

(4 points)

- 1) work Task
- 2) work product

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- 2) in conjunction with proven methods for model building, system design, solution and Testing

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- 1) work Task
- 2) work product
- 3) quality assurance point
- 4) project milestones

3) helps to cope with flexibility and uncertainty

4) ~~Person~~ Management demands the new-business responses

2. What are the conditions for tools and technology to work well within a Web/ago development? (3 points)

1) To be used without agile framework practice

2) in conjunction with proven methods for model checking, problem design, solution and Testing.

3. Briefly describe the actions that are set to compose any framework in Web Engineering? (4 points)

1) work Task

2) work product

3) quality assurance point

4) project milestone

4. Failure and Fault are two terms used for describing bugs. Define the two terms to show the differences between them?

(2 points)

Fault: when human make a mistake called an error in performing Software activities

Failure: departure from the system's required behaviour

Fault of user \rightarrow ~~Fault~~
Failure of the system

5. Describe the elements of the System approach for software engineering?

(4 points)

- 1) Hardware, Software and interaction with people
- 2) identify activities and objects
- 3) define system boundary
- 4) nested systems and interrelationship.

6. Write what defines good quality software according to the different stakeholders (users, designers and maintainers)?

(2 points)

- 1) user: quality is fitness in purpose, a care about an external (correct functionality)
- 2) designer and maintainers: quality is consistency of characteristics. Care about the internal structure of code.

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~~maintainers~~

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2) designer and maintainers : quality is conformance to characteristics, care about the internal (types of faults) ~~maintainers~~

III. SCENARIO

(5 points each)

The eGovernment Excellence Award Program has been created for the e-Government to recognize, reward and showcase the pioneering ICT initiatives taken by the Kingdom of Bahrain's community. The organizing committee assigned JURY members to assess the nominated projects that were categorized according to some WebApp types discussed in this course. Considering the following scenarios, help the JURY members by:

- Categorizing the project according to the WebApp type(s)
- Justifying your categorisation

Project 1: The nominated WebApp is to enable the employers to register new employees with Social Insurance Organization (SIO) through connecting with the Central Informatics Organization (CIO) to provide employees' status so that an approval from SIO will be sent to the employers upon the approval of the submitted papers and eligibility.

a) ^{Service} ~~Data~~ - oriented

b) because it ~~is~~ an online service and offline

Project 2: The nominated WebApp is to enable the citizens to view and pay their traffic violations as well as to renew their driving licence.

a) Transaction - oriented

b) enable the user ~~to~~ use service online by doing a transaction (paying).

+ Informational

+ Service-oriented

Project 3: The nominated WebApp is to enable the citizens to view the drugs along with their prices. Also, the WebApp will enable the citizen to search for a specific drug and provide detailed information about it.

a) interaction, informational

b) because its combining between view and searching for the drug

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